METHODS AND APPARATUS FOR FILTERING EGM SIGNALS DETECTED BY AN IMPLANTABLE MEDICAL DEVICE

ABSTRACT OF THE DISCLOSURE

An analog physiologic signal, e.g., the cardiac EGM, sensed by an IMD is filtered with a high pass filter (HPF), the cut-off frequency of the HPF being within a predetermined frequency bandwidth, wherein a low-band portion of the predetermined frequency bandwidth is attenuated in the filtered physiologic signal. The filtered physiologic signal is digitized in real time order, and the digital data set is filtered in reverse time order employing a digital IIR filter having characteristics substantially matching the cut-off frequency and filter characteristics of the HPF. When the system is implemented within an IMD, the filtered digital data set is compressed by lossy compression algorithm, and the compressed data set is filtered in reverse time order. In certain embodiments, the filtered digital data set is uplink telemetry transmitted to an external medical device, and the uplink telemetered data set is filtered in reverse time order employing a digital backward IIR filter resident in the external medical device.